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OCT 04 2018

MEMORANDUM FOR THE COMMISSIONER

Commissioner
Canada Revenue Agency
V102:53pm
OCT 04 2018
COM-2018-00983
Commissioner
Agence du revenu du Canada

**RECENT MEDIA ATTENTION: USE OF ARTIFICIAL INTELLIGENCE
IN TAX CASES**

(For information)

SUMMARY

An article was published by the CBC (attached) on September 13, 2018, titled "Litigation gone digital: Ottawa experiments with artificial intelligence in tax cases". The article discusses the Government of Canada's 18 month pilot of an information technology product called Tax Foresight, the use of artificial intelligence (AI) tools by federal departments and the lack of legislation, regulations or a policy framework governing its use. While the Department of Justice (DoJ) was the focal point of the story, the Canada Revenue Agency (CRA) was also mentioned.

TIMEFRAME

From March 2018 – May 2018, 130 auditors from the International, Large Business and Investigations Branch (ILBIB) had trial access to the Tax Foresight software. This allowed the user group to evaluate its potential usefulness. Feedback was positive and the CRA is now in negotiations to secure 100 licences by the end of December 2018. Once the contract is finalized, training sessions on the software will be rolled-out to users.

BACKGROUND

Tax Foresight

Tax Foresight is an AI-based software that predicts the likelihood of an assessing position succeeding in tax court. Users are asked a series of questions about the facts and circumstances surrounding a tax issue and then using data drawn from common law cases within its database, the software provides an outcome prediction. The software also produces a summary of the reasons for its conclusion (i.e. the cases and reasoning relied on and the factors that were important in reaching the conclusion). Tax Foresight also allows practitioners to find cases by facts and outcomes instead of keywords or citations.

An additional tool for auditors

Tax Foresight is a technology that is meant to support the research process of auditors over the course of their work. More importantly, automation of the research process will significantly reduce the time spent doing the research.

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To determine if the software would benefit the ILBIB audit work, from March to May 2018, 130 auditors took part in a trial period. At the end of this period, a survey was circulated to obtain user feedback and the overall results were positive with a recommendation to purchase the software. Feedback also indicated that the technology works better for relatively straightforward tax situations where substantial case law exists.

It is important to note that ILBIB will not use Tax Foresight as a substitute for the professional judgement of its technical staff; the software will be added to the auditors' existing suite of tools. ILBIB auditors have been using technology to assist with their workload and case selection for about 20 years. For example, the International and Large Business Directorate (ILBD) within ILBIB currently uses the Integrated Risk Assessment System (IRAS), an automated risk assessment tool. By running approximately ^{16(1)(c)} algorithms developed by CRA subject matter experts, this system assists in identifying the higher risk taxpayers that should be audited. The system ranks the entire large business population to target the highest risk taxpayers, nationally.

Ultimately, the final decision on which taxpayers to audit will remain in the hands of the human professionals at the CRA, regardless of artificial intelligence and other technologies used.

Why is this beneficial

Tax Foresight is excellent software that will support Agency employees in saving time when performing research on a large number of court cases. The series of questions and final summary report will also ensure the audit file has supporting information for all relevant facts so appeals and litigation have sound cases to work with.

Tax Foresight uses algorithms to decrease the time taken by auditors to research tax cases and analyze facts in order to predict the possible outcome of a tax situation. Whereas, IRAS uses algorithms to decrease the time taken by the workload selection step to identify high risk taxpayers that should be audited.

CONSIDERATIONS

The CBC article highlights that the Government of Canada does not have legislation, regulations or a policy framework that governs the use of AI. This is in part due to the use of AI by federal departments being relatively new and also because the technology being used is agile. The article highlights that the DoJ has acknowledged that stakeholders should be engaged to reflect on challenges and new legal, ethical and policy issues surrounding the use of AI.

While the public and experts express some concern about ethical issues and potential need for legislative controls on the use of AI, these concerns generally relate to the use of personal data that is used in a non-transparent way to make decisions about social policy issues. The CRA's current and proposed reliance on AI is smaller in scale and raises fewer concerns given that AI is not being used as a substitute for human judgement.

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On a positive note, the article quotes a tax expert from Toronto who commends the government for exploring new and innovative technologies in its work.

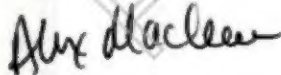
There is potential for further media and parliamentary interest in the CRA's use of Tax Foresight and AI because of how it could impact decision-making on taxpayer files.

CONCLUSION

Adding the Tax Foresight software to the suite of existing tools available to ILBIB auditors is in line with the branch's commitment to make better use of data and analytics to produce better results.

Blue J Legal, which owns and licences use of Tax Foresight, is interested in expanding its relationship with the Agency to allow all programs access to the tool (i.e. an enterprise licence). Once the 100 Tax Foresight licenses are available to the ILBIB audit community (December 2018), and training has been rolled out, further consideration will be given to this option.

Should you require additional information, please do not hesitate to contact me at 343-291-4417 or Alexandra MacLean, Director General, International and Large Business Directorate at 613-957-7473.



for

Ted Gallivan

Attachment: 1

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Published | Publié: 2018-09-13 05:00 (EST)
Received | Reçu: 2018-09-13 04:16 (EST)



CBC.ca: Technology & Science | Politics

Litigation gone digital: Ottawa experiments with artificial intelligence in **tax** cases

Dean Beeby

The Justice Department has quietly launched an artificial intelligence experiment as the Trudeau government prepares to use such sophisticated software to help make decisions in cases involving immigration, pension benefits and **taxes**.

The 18-month pilot project, which involves the **Canada Revenue Agency**, was started even though the government has yet to establish clear ethical guidelines on its use of artificial intelligence, or AI.

Definitions of AI vary, but it's generally understood as a computer system designed to quickly learn, reason and make decisions by imitating human cognition.

Since January, 26 **tax** practitioners at Justice Canada have been using **commercial** AI software that analyzes thousands of court cases to predict how judges might rule on a given set of facts about a taxpayer's affairs.

"There is currently no legislation, regulations, policy position or framework within the Government of Canada to govern the use of AI in Canada," says a May 2018 briefing note, obtained by CBC News under the **Access to Information Act**.

"There is a need to engage stakeholders to look at this uncharted territory with a critical reflection on challenges and new legal, ethical and policy issues."

Policy vacuum

Even in this policy vacuum, the Justice Department wants to be "on the leading edge and part of the critical discussions surrounding how to leverage new technology as a department and as a government," says the briefing note.

The pilot project uses the software program **Tax** Foresight, developed last year by Toronto-based tech startup Blue J Legal Inc.

The company, founded by legal experts at the University of Toronto, claims that the program predicts **tax**-litigation outcomes with an accuracy rate of 90 per cent.

The Department of Justice, which has paid Blue J Legal more than \$20,000 for licences, went ahead with the pilot after its AI Task Force recommended an off-the-shelf product for the exercise, said spokesman Ian McLeod.

The department did not provide details about how **Tax** Foresight will be used, except to say that it will not supplant human employees. "This technology is meant to assist government employees in their work, not replace them," said McLeod.

I think there's a lot of hype around AI - Fenwick McKelvey, assistant professor of communications, Concordia University, Montreal

Justice Canada also is looking at whether to launch two other pilots. One pilot under consideration would be launched at Immigration, Refugee and **Citizenship** Canada (IRCC) to help develop "litigation strategies," says a notice to industry sent earlier this year asking for information.

The other proposed pilot, with **Employment and Social Development Canada (ESDC)**, would be used in litigation and research involving compensation for federal government employees. Eventually, AI could be expanded to work on litigation involving the **Canada Pension Plan**, **Old Age Security** and **Employment Insurance** cases, says the notice.

Justice Canada is still reviewing industry feedback for the IRCC and **ESDC** proposals, and has not made any decisions, McLeod said.

Through the Treasury Board, the Trudeau government has been ramping up efforts to use more artificial intelligence programs across departments. Those efforts are being quarterbacked by Alex Benay, who was appointed Canada's chief information officer in April 2017.

Treasury Board has been circulating a white paper suggesting seven principles for using artificial intelligence, including a proposal that AI software should be "trained" in ethics and human-rights obligations.

The document also says AI "should be deployed in the most transparent manner possible," and that "people should always be governed - and perceived to be governed - by people."

Critics and skeptics of AI have warned that the technology can be problematic, especially when it's used in policing and justice-related applications. Underlying crime data used by the software, for example, may be racially biased - which could drive litigation decisions that reflect racist attitudes.

"I think there's a lot of hype around AI," Fenwick McKelvey, an assistant professor of communications at Concordia University in Montreal, said in an interview. "It raises a lot of concerns where the rubber hits the road."

"If it's for **tax** cases, I think there's room for manoeuvre. But I think that it's important to be sensitive to some of the downsides of AI in justice and law enforcement, given the risks."

AI and human rights

McKelvey said government must ensure any use of AI does not violate the Charter of Rights and Freedoms or the **Privacy Act**, and operation of the software must be subject to external audit.

Fabio Bonanno, a **tax** expert with Trowbridge Professional Corp. in Toronto, began using the **Tax** Foresight software this year as a time-saving tool to research large numbers of court cases.

He said the firm's advice to clients remains in the hands of human professionals, not in the software, and he welcomed the news that Justice Canada is using the same Blue J Legal software.

"Hopefully, it will reduce any sort of disputes," Bonanno said in an interview. "On their end, there are employees in the Department of Justice that are going to be doing the same thing as me."

Photo: Computers using artificial intelligence have been taught to play games, such as Go. Now a Justice Canada pilot project wants them to help litigate **tax** cases.

Credit: Getty Images/iStockphoto

Url: <https://www.cbc.ca/news/politics/artificial-intelligence-tax-justice-pilot-1.4817242>